

REMARKS

Claims 1, 7 and 9 are amended. Claims 1-9, as amended, remain in the application. No new matter is added by the amendments to the drawings and the claims.

The Rejections:

In the Office Action dated March 23, 2006, the Examiner rejected Claims 1-9 under 35 U.S.C. 103(a) as being unpatentable over Zappa (2352754) in view of Ketonen (6539673).

Referring to Claims 1 and 3-5, the Examiner stated that Zappa discloses a "Smoke Seal Element For Lift Doors" as claimed (See Figs. 1-4 and respective portions of the specification) and further discloses an elevator shaft closure for a telescopic door (34,36) having at least one door leaf and door frame, a closing edge region being formed in a closed state by the at least one door leaf and a closing edge of the door frame (See Fig. 2), comprising; a first door frame part (38) and a second door frame part (40) cooperating to form the closing edge of the door frame, the first and second door frame parts adapted to be attached to a building at an elevator door opening (See Pg 2 - Pg 4); and a thermally separable material (Pg. 3 ¶ 2) connecting the first door frame part to the second door frame part. The Examiner admitted that Zappa does not disclose whereby the thermally separable material releases the first door frame part from the second door frame part and the first door frame part changes position relative to the second door frame part under predetermined thermal stress. The Examiner stated that it is broadly construed and generally noted that as a result of the first and second door frame parts being connected by thermally separable material that the first or second door frame part would separate and change position relative to a second door frame part. According to the Examiner, Harkins discloses doors (16, 18), door jambs (32, 34), smoke seal strip (120), fire resistant core (166), and a strip of intumescent material (200) (See Figs. 1-3). The Examiner stated that Harkins further discloses that the doors (16, 18) are attached to door jambs (32, 34) which include a fire resistant core (166) and that when a fire occurs intumescent material (200) reacts to expand and burst through the jamb trim (216) allowing the intumescent material to fill and seal a clearance gap (24) to prevent smoke, heat, and flames from passing between the door jamb and door (See Sect. 0033). According to the Examiner, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the apparatus of Zappa to include the teachings of Harkins

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and include intumescent material to expand and seal the gap so that when the door frame connected by the thermally separable material of Zappa's apparatus separated and changed position the intumescent material expanded and sealed the gap to prevent fire, flames, and heat from entering.

Referring to Claim 2, the Examiner stated that Zappa discloses wherein the first door frame part and the second door frame part are configured to form a labyrinth (See Fig 2).

Referring to Claim 6, the Examiner admitted that Zappa does not disclose wherein the first and second door frame parts are formed of different materials, but stated that it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the apparatus of Zappa so that the first and second door frame parts were formed of different materials so that door frame and door could match the material of construction for aesthetic and design purposes.

Referring to Claims 7-9, the Examiner stated that the methods described in these claims would inherently result from the use of Zappa's "Smoke Seal Element For Lift Doors" in view of Harkins "Fire-Resistant Wood Assemblies For Buildings" as advanced and described above.

The Response:

Applicant noted that replacement Figs. 5-7, filed on July 6, 2004, were incorrectly labeled as "Prior Art" and Fig. 5 contains an incorrect reference numeral. Figs. 5-7 actually illustrate the claimed invention as stated on Page 4, at Lines 7-13, of the specification and shown in the original drawings. One of the "20a" reference numerals in Fig. 5 should be "20b". Attached is a proposed drawing correction for approval by the Examiner.

Applicant amended Claims 1 and 9 to clarify that the first door frame part and the second door frame part are in the closing edge region. Applicant amended Claim 7 to clarify that the second door frame part forms the closing edge of the door frame with the first door frame part.

The Examiner rejected Claims 1-9 as being unpatentable over Zappa (2352754) in view of Ketonen (6539673). However, in the stated basis for the rejection, the Examiner refers to Zappa in view of the Harkins patent application publication (2003/0167709) and describes the Harkins doorway 10. Therefore, Applicant is responding to the rejection with reference to Harkins.

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Zappa shows a smoke seal element for an elevator door. In Fig. 2, an elevator shaft closure for a telescopic door having door panels 34, 36 positioned in a door frame 38, 40 at an elevator door opening. The smoke seal elements 10 are provided in closing edge regions being formed in a closed state by: 1) a closing edge of the door panel 34 and a closing edge of the door frame 38; adjacent closing edges of the panels 34, 36; and 3) a closing edge of the door panel 36 and a closing edge of the door frame 40.

Zappa doesn't show first and second door frame parts cooperating to form the closing edge of the door frame whereby the closing edge region is formed in the closed state by the at least one door leaf and the closing edge of the door frame as recited in independent Claims 1, 7 and 9. This configuration is shown in Figs. 5-7 wherein the first door frame parts 20a, 20a', 20a'' cooperate with the second door frame parts 20b, 20b', 20b'', respectively, to form the closing edge of the door frame 2a, 2a', 2a'', respectively. In Zappa, the first door frame 38 forms a first closing edge and the second door frame 40 forms a second closing edge independent of the first door frame 38, which closing edges are spaced apart to form the door opening.

Further Zappa is absolutely silent regarding a thermally separable material connecting the first door frame part to the second door frame part and there is absolutely no indication that a thermally separable material releases the first door frame part from the second door frame part and that the first door frame part changes position relative to the second door frame part under predetermined thermal stress as recited in independent Claims 1, 7 and 9. Zappa discloses a smoke seal element 10 which prevents cold smoke from entering the elevator shaft and uses a brush.

Harkins shows a fire-resistant wood assembly for buildings including a smoke seal strip 120 which seals a door in a building against smoke and additionally an intumescent material 200 which expands, in case of fire, and fills and seals clearance gaps and which prevents smoke, heat and flames from passing between the door jamb and the door leaf. Neither the smoke seal strip 120 nor the intumescent material 200 connects two door frame parts by a thermally separable material as recited in Applicant's independent Claims 1, 7 and 9. The Harkins intumescent material 200 is not the claimed thermally separable material that connects two door frame parts and releases the door frame parts from one another under predetermined thermal stress. The Harkins intumescent material 200 acts in exactly the opposite manner as it is glued to the dado

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192 and the jamb trim 216. Under thermal stress the intumescent material 200 breaks through the trim 216 and expands to fill the clearance gap 240 between the edge of the door 18 and the doorframe 24. Harkins is absolutely silent regarding that resulting from release by thermal material under thermal stress, one of the door frame parts would change its position relative to the other door frame part.

Applicant does not understand the Examiner's statement that it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the apparatus of Zappa to include the teachings of Harkins and include intumescent material to expand and seal the gap so that when the door frame connected by the thermally separable material of Zappa's apparatus separated and changed position the intumescent material expanded and sealed the gap to prevent fire, flames, and heat from entering. Firstly, Zappa does not disclose a thermally separable material. The Examiner's citation to "Pg. 3 ¶ 2" does not mention a thermally separable material and there are no door frame parts in Zappa that are connected by a thermally separable material and separate under thermal stress. Secondly, Applicant's claims do not include an intumescent material, or any other element, to expand and seal the gap.

Combining Zappa with Harkins as suggested by the Examiner would result in brushes that seal an elevator door against a door frame against passing of cold smoke and inserts of intumescent materials that would extend into the remaining gaps in case of fire or heating.

By contrast the claimed invention concerns an elevator shaft closure for a telescopic door having at least one door leaf and a door frame, a closing edge region being formed in a closed state by the at least one door leaf and a closing edge of the door frame, comprising:

a first door frame part and a second door frame part cooperating to form one solely closing edge of the door frame, said first and second door frame parts adapted to be attached to a building at an elevator door opening; and

a thermally separable material connecting said first door frame part to said second door frame part whereby said thermally separable material releases said first door frame part from said second door frame part and said first door frame part changes position relative to said second door frame part under predetermined thermal stress.

The difference between Applicant's claimed invention and Zappa in view of Harkins is that Zappa modified by Harkins protects against cold smoke using brushes and uses inserts of

intumescent materials which extend into the remaining gaps in case of fire or heating. The claimed invention doesn't protect against cold smoke. It protects against fire using a two part door frame on the closing edge side or a two part slamming stile. The two parts are connected by a thermally separable material. The thermally separable material releases the two parts in case of fire, respectively in case of thermal stress. Then the released door frame part changes its position relative to the other part. The released part extends over the gap and protects against fire as required by some elevator codes.

These are clearly different solutions. The claimed invention neither shown nor suggested by Zappa and Harkins.

The Examiner stated that the prior art made of record and not relied upon is considered pertinent to Applicant's disclosure. The Examiner cited: Allen (US5836424); Ketonen (US6539673); Hayashi et al. (US5156237); Patterson et al. (GB2148993); and Southern (GB2309729) as disclosing a "Seal with Intumescent Body and Flexible Smoke Seal" that is held fast by means of adhesive material or retained within a channel. Applicant reviewed these references and found them to be no more pertinent than the prior art relied upon by the Examiner in the rejections.

In view of the amendments to the claims and the above arguments, Applicant believes that the claims of record now define patentable subject matter over the art of record. Accordingly, an early Notice of Allowance is respectfully requested.